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ABSTRACT

The steps involved in tailoring a periodical and monograph price index to a university library are examined, as are the difficulties involved in applying a simple methodology such as a price index when the data base has not been organized to play an active role in the decision-making process. The following topics are addressed: the shifting of library funds from books to periodicals, the price increase differential between domestic and foreign titles, and prices paid by the library and those advertized by publishers. University, library, and acquisition budget data for the University of Montreal for 1971-72, 1975-76 and 1979-80 are examined, as are the Canadian consumer price indexes for postage, book and printing paper, and other specific commodities. Findings include the following: a drastic shift of library funds from books to periodicals has occurred in the past years, but the number of titles is declining in both categories; foreign periodical titles are much more expensive than domestic titles; and periodical prices paid by the university library are higher than those advertised by publishers. (SW)

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TOWARDS A PERIODICAL AND MONOGRAPH PRICE INDEX

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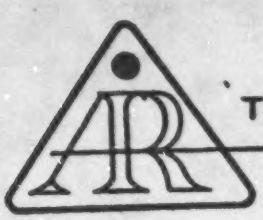

This paper was presented at the Twentieth Annual Forum of the Association for Institutional Research held at the Peachtree Plaza Hotel in Atlanta, Georgia, April 27 - May 1, 1980. This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC Collection of Forum papers.

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ABSTRACT

This paper is aimed at examining the various steps and intricacies involved in tailoring a periodical and monograph price index to a university library, and at raising a number of issues librarians are wrestling with in an attempt to balance their acquisition budget. The authors describe the difficulties involved in applying a simple methodology such as a price index when the data base has not been organized to play an active role in the decision-making process. Findings related to the shifting of library funds from books to periodicals, the price increase differential between domestic and foreign titles, and prices paid by the Library and those advertized by publishers are presented.

TOWARDS A PERIODICAL AND MONOGRAPH PRICE INDEX

The purpose of this study is not to re-invent the wheel, as the field of economics has long discovered how to construct and apply price indexes to various commodities, including library materials. However, publishers and particularly institutional librarians know that book and serial price indexes generally available to them must be used with caution because they represent national price patterns and should, under no circumstances, be assumed to depict individual library characteristics (Lynden, 1977). This article is aimed at examining the various steps and intricacies involved in tailoring a monograph and periodical price index to a university library, and at raising a number of issues librarians are wrestling with in an attempt to balance their acquisition budget.

REVIEW OF LITERATURE

Library Role in Jeopardy

Few would deny the increasing importance of information in our society as half of the working population is involved with information industries representing annual expenditures of one-third of a trillion dollars (Boss, 1979). This affluence of information coupled with tight budgets and rising library materials has put great stress on major research library managers (Drake, 1976). In fact, constituents of the university community still expect them to make libraries vital and dynamic centers of inspiration, information and advanced research (Axford, 1973; Pierce, 1978) with an eroding dollar budget.

Traditionally, universities have been allocating approximately 5% of their educational and general budget to library operations (McAnally, 1963, Drake, 1977); however, this percentage distribution appears to have been used more as a convenient device to divide up funds than as the result of an evaluation of actual library needs. When institutional

budgets were on the rise, library managers enjoyed years of expanding collections (Peterson Holland, 1976); today, they face a completely different set of circumstances: a) most budgets have been frozen; b) price increases of books and serials have gone up at a much higher rate than other university costs (De Gennaro, 1977; Thompson and Kronenfeld, 1980; Lecavalier, 1980); and c) decisions are being made on serial subscription cuts and monograph purchase curtailment (Reid, 1976; White, 1976). This scheme leads to the obvious question: how is a library supposed to remain an adequate and equitable interface between the users and the ever increasing production of literature when there is not enough money to meet the commitments of the previous year?

Progress in Bibliometrics

A survey of the library science literature indicates a keen interest by library professionals in quantitative analysis since the publication of the Clapp-Jordan formula (1965). The main contribution of that formula was to introduce the notion of library materials allocation as a function of the characteristics of the curriculum, faculty, students, and other similar factors. From that point on, followers have been hard at work to identify and refine the variables most likely to result in equitable funding. The departmental library usage and literature size were first considered by McGrath, Huntsinger, and Barber (1969); the importance which society and the university gave to the work of a department, as well as its size and composition was retained by Goyal (1973); McGrath (1975, 1978) gave strong indications that the various features of the curriculum and the academic disciplines should be a heavily weighted factor. Historical inequities and collection evaluations are also frequently mentioned as subjective formula variables.

Besides budgeting and allocation formulae, several other instruments designed to suggest directions in the decision-making process have been available. Just to inform briefly of some of them, it is worth mentioning cost-effectiveness analyses of library resource allocation (Mount and Fasana, 1972;

Gold, 1975; Kohut and Walker, 1975), forecasting library growth rate techniques (Drake, 1976; Leach, 1976), literature obsolescence scales (Goffman, 1970), and rank-order distributions of importance and usefulness of periodicals derived from citation analysis (Garfield 1976). As Pierce (1978) accurately pointed out, these statistical techniques have generally been met with a fair amount of skepticism because department chairpersons felt there was a danger that the results would be viewed as final decisions instead of guides.

Measurement of Price Increases

In addition to the quantitative instruments aforementioned, library managers have made extensive use of price indexes to justify and allocate budgets. There are four most commonly known periodical price indexes: a first one is referred to as the Library Journal price index (Clasquin, 1979); it is published annually in October and reflects the price increase trends of periodical published in the United States in the past three years. A second price index is called the Blackwell Index, and is published each year in the May issue of the Library Association Record (1979); since Blackwell is a British agency, all prices are reported in pounds sterling only; contrary to the Library Journal index, the Blackwell Index includes foreign titles; the currency conversion problem, however, makes it less readily usable. A third index identified as the Widener Periodical Price Index was recently developed by Williams (1978) in order to have a better grasp on the price increases by country of origin. Finally, Brown and Philips (1979) make an annual update of price increases of American periodicals for as far back as a ten-year period. On the monograph side, price indexes are generally not available other than under the form of yearly increases. Publishers Weekly carries such comparative statistics (Dessauer, 1980).

Again, no matter how useful these figures are to depict price patterns, there is ample justification for preparing institutional data. The mix of academic disciplines in conjunction with the differential rates of inflation

across disciplines appears as an obvious one. Statistics compiled by Brown and Philips (1979) show that the average subscription price of an American periodical last year was $30.37. Further scrutiny indicates that Chemistry and Physics journals averaged $118.33 as compared to $14.67 for History. The proportion between domestic and foreign titles is also a determining factor; a case in point is the Université de Montréal. As one of the largest universities in Canada offering a myriad of academic programs, the Université de Montréal also happens to be a French-speaking school. Therefore, not only does it have to import, like most Canadian research universities, a great deal of the scientific literature from outside the country, but it must also try and accommodate students with a certain number of French reference books and periodicals whenever feasible. These conditions increase immensely the probability of dealing with agents, paying more for postal services, and being at the short end of the currency conversion business, specially when the Canadian dollar stands at an unfavorable position vis-à-vis the already devaluated US dollar.

METHODOLOGY

A typical price index is generally designed by comparing the observed price of a commodity at a given period (t_1, t_2,...,n) with the price of the same commodity of an agreed-upon base year (t_0). The construction of such an index necessitates a fondamental decision regarding the homogeneity of the commodity throughout the years. In other words, it must be ascertained that price variations to produce an item are directly caused by fluctuating costs alone and are not the result of another mixture of components being affected by different rates of inflation in the production process of that item. This decision is often an arduous one because of the difficulty involved in identifying the principal constituents of a goods and in gathering hard data on them. Can one assert that the first edition of a book published in 1970 represents the same commodity ten years and three editions later? This type of inherent problem accounts for the limited maneuvering range one is confronted with in this kind of study.

Three major steps were involved in the data collection. First, it was necessary to reconstruct the financial picture of the University, the Library, and the Acquisition Department, and to establish relationships among them in terms of their relative importance and their annual evolution for the last ten years (base year = 1971). This process also served to determine the number of titles bought by subject area and the amounts of money used.

Second, a sample of subject areas and titles had to be selected. Ideally, all subject areas and titles should have been included, but this route proved to be highly impractical since the needed information had to be collected manually. Therefore, it was decided that the sample should represent: 1) the four countries which were the major sources of titles, namely, Canada, France, Great Britain, and the United States; 2) the four main categories under which subject areas were clustered, that is, Health Sciences, Humanities, Pure Sciences, and Social Sciences; and 3) the subject areas which constituted major expenditures by the Acquisition Department. The Library Acquisition Department staff was then asked to provide at least five periodical titles on the one hand and five monograph titles on the other hand for each of the 24 selected disciplines in each of the four countries.

Third, the differential between the publishers' advertized prices and prices actually paid by the Library was of significant interest. This information was gathered from catalogs of publishing companies (Ulrich's, 1979) and payment history records of the Library. Many invoice-related difficulties led to the elimination of a number of titles. Periodicals published less frequently than semiannually were dropped and so were the titles not paid on an annual subscription basis. Finally, when all technical difficulties were resolved, a sample of 256 periodical titles distributed evenly across the cells was left. Although the authors intended to cover both periodicals and monographs, it became obvious, during the data collection, that the lack of a manageable and consistent data base on monographs would only lead to unreliable and meaningless results. The main problem arose from the hidden

costs of book prices. Sometimes invoices did not indicate whether insurance, postage, and discount dollar figures were already mixed with the actual book price. The size of purchase orders was another imponderable factor having influence on the price of a book; by and large, the bigger the purchase order, the less expensive a book was. Finally, a same book was often marketed by different companies from one year to the next. All these obstacles led to an imbroglio. Therefore, a more extensive case is made with periodicals while monographs are given lip service.

RESULTS

The dollar figures presented in Table 1 indicate that in the last 9 years, the University educational and general budget has more than tripled to reach an index of 345 as compared with fiscal base year 1971-72. This percentage yield represents a yearly average increase of 43% in inflated dollars. This growth rate might, at first sight, appear phenomenal; however, during the same period, headcount enrollment went from 18,000 to 28,000, with large contingents of students registering in the more expensive professional programs. The Library (329) and Acquisition (335) budgets kept a slightly slower pace, although similar, than the University budget. Observed dollar amounts allocated for all library expenditures varied between 5% and 6%, which is about the level of funding usually reported in the literature. Out of this total library budget, the share used to purchase periodicals and monographs ranged from 20% to 24%.

A rapid overview of Table 2 leads to a significant finding. Financial resources were invested in periodicals at a much higher rate (431) over the years than it was the case for monographs (264). In fact, there was a complete reversal of the relative proportion of funds spent for periodical subscriptions and book purchases in the last 5 years. Although periodicals are now receiving the larger share of the new distribution, it is nothing short of astonishment to notice that the number of periodical titles has begun to decrease along with the nose-dived downtrend of monograph titles (79).

TABLE I

University, Library, and Acquisition Budgets ($ Can.)

Université de Montréal

Fiscal Year	University Educational and General Budget		Library Budget		Acquisition Budget		Library $ / University $	Acquisition $ / Library $
	Amount ($000)	Index	Amount ($000)	Index	Amount ($000)	Index	%	%
1971-72	48 600	100	2 910	100	600	100	6.0	20.6
1975-76	99 500	205	5 150	177	1 250	208	5.2	24.3
1979-80	167 500	345	9 570	329	2 010	335	5.7	21.0

TABLE 2

Periodicals and Monographs

Evolution of Budget and Number of Titles

Fiscal Year	Acquisition Budget				Acquisition Budget		Number of Titles			
	Per. ($000)	Index	Mon. ($000)	Index	Per.%	Mon.%	Per. (000)	Index	Mon. (000)	Index
1971-72	255	100	345	100	43	57	9.5	100	25.4	100
1975-76	555	218	695	201	44	56	13.2	139	25.0	99
1979-80	1 100	431	910	264	55	45	12.6	133	20.0	79

When one examines the periodical price index figures assembled in Table 3, the multifaceted problem of subscription costs becomes more obvious. The price of domestic journals has risen at a substantially lower pace than that of foreign titles. The fact that this finding has been corroborated by many authors in the literature (White, 1976; Williams, 1978) is of very little comfort because the Université de Montréal Library buys an estimated minimum of 75% of its periodicals from non-Canadian sources, and more than 50% from Europe. Price increases have been particularly sharp for publications originating from France and Great Britain, let alone certain publications of very specialized fields, mainly in the Health Sciences, imported from robust-currency countries such as Holland, Switzerland, and West Germany; by all means, the reported figures must be interpreted as conservative estimates. The variation in inflation among subject matter categories exhibits differential rates. Canadian price indexes are quite homogeneous while those of the three other countries fluctuate considerably across categories.

Table 3 also shows price indexes of periodicals as reflected by prices advertized by publishers and prices actually paid by the Library for the same titles. This issue is generally receiving marginal attention in the literature despite huge differentials between the two sets of prices. Evidence demonstrates that the Library is picking up a much larger bill than the publishers' price rates would lend one to believe. For illustrative purposes, French Humanities periodicals have an index yield of 378 or 42% per year according to the publishers' posted prices while the same commodity recorded a price index of 490 for the Library over a 9-year period, or an annual average of 61%. The allocation index which represents the evolution of dollar allotment by funding category was found to be generally higher than the indexes arrived at for each of the four countries investigated. This trend is not unduly alarming since the base year data are not the same. A more direct relationship would have been possible if the Library had had available records showing the relative proportion of periodicals bought by country of origin in each academic discipline.

TABLE 3

Periodical Price Indexes* ($Can.)

A Comparison Between the Library and the Publishers

Countries / Categories	Canada Index		France Index		Great-Britain Index		USA Index		Allocation Index by Funding Category
	Lib.	Pub.	Lib.	Pub.	Lib.	Pub.	Lib.	Pub.	
Health Sc.	217	190	363	298	426	310	252	203	399
Humanities	207	194	490	378	426	347	279	223	560
Pure Sc.	225	171	400	365	388	360	319	315	502
Social Sc.	229	182	419	313	399	308	237	199	360

* Price index $= \frac{t_g}{t_o} = \frac{\text{1979 Prices}}{\text{1971 Prices}}$

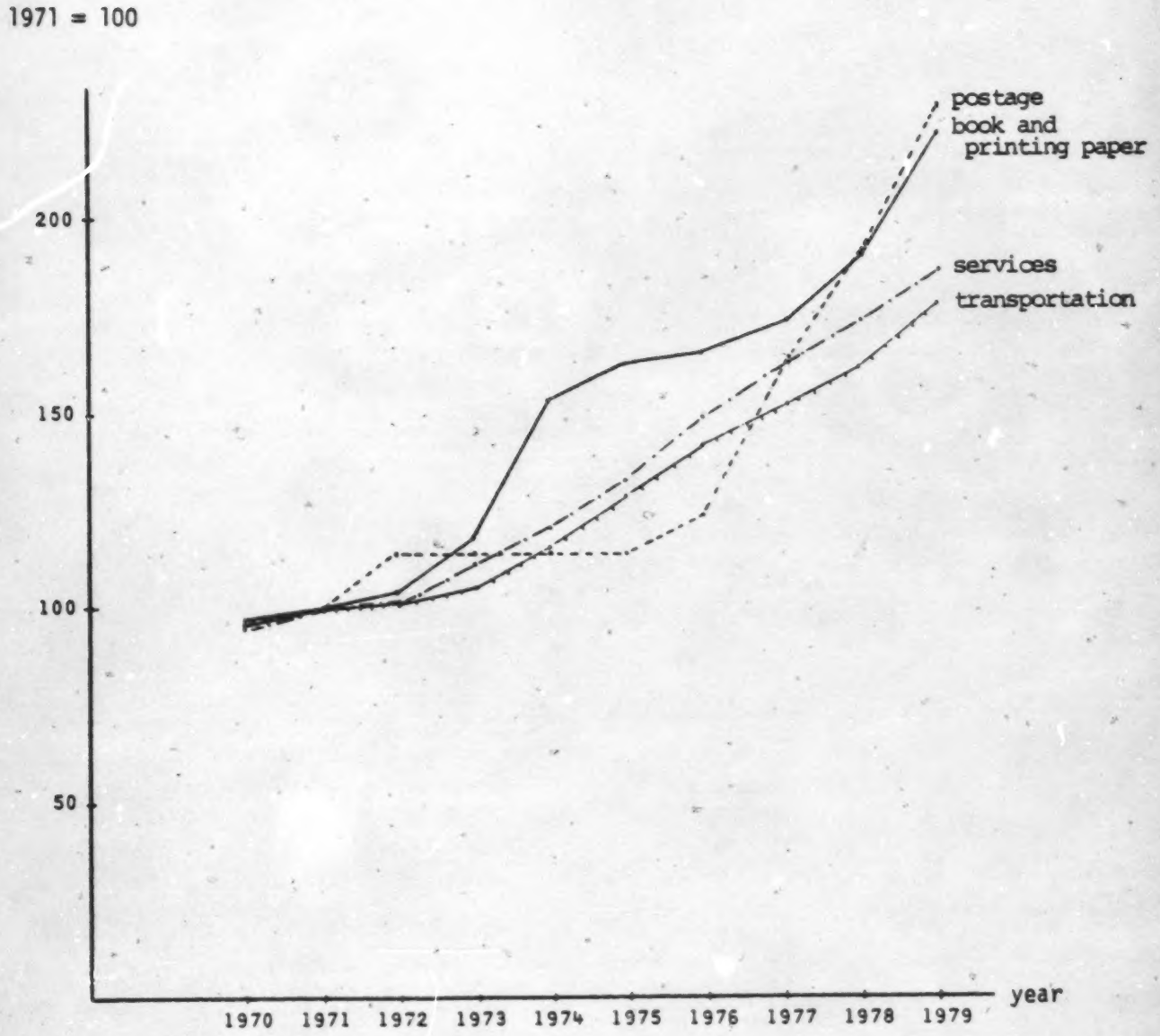
DISCUSSION OF THE RESULTS

The astronomical inflationary rate suffered by most academic libraries in the past decade has left librarians searching for logical, though oftentimes elusive, solutions. Many librarians have claimed that they were "the victims of discriminatory pricing stratagems" (White, 1976, p. 364) because libraries were charged more than individuals for subscriptions. That libraries are the most affluent group of buyers available seems to be a well-entrenched fact among publishers, and not much relief should be expected there. According to White (1976) who has studied the profit taken by commercial publishers of scholarly journals, there has been no evidence to substantiate unreasonable operating profits. The Canadian Consumer Price Index (CPI) for library material-related goods and services has increased sharply in the past years as revealed in Figure 1. This tendency becomes even more noticeable when libraries are buying a large proportion of foreign titles because of the weakened Canadian dollar.

For many years, most libraries have benefited from the subscription-agency services because agents would receive substantial discounts from the publishers and would pass part of those reductions to the libraries. However, discounts to vendors seem to have been trimmed down and therefore agents are forced to charge more to libraries. In that context, the economic role of intermediaries should be re-examined to avoid paying excessive costs for currency exchange rates, address changes, postage services, and other handling charges. There exists a simple scheme that institutions must uncover to avoid paying twice for foreign money conversions. For example, a Belgian agent could buy materials from France with French francs and ask the institution to get paid in Belgian francs; obviously, this double foreign currency conversion is costly. This year, the Université de Montréal Library is buying more than ever directly from the publishers in an attempt to reduce these extra charges. Still, certain periodicals and monographs, mainly from France, are available only through agencies. Also, there is an educated sentiment among librarians that when services provided by agencies are taken away, the regular library staff picks up the slack. Of course, this situation might result in greater productivity as it might give rise to additional personnel demand. In the

FIGURE 1

CANADIAN CONSUMER PRICE INDEXES
FOR
SPECIFIC COMMODITIES



latter case, salary increases of the past few years would probably provide enough incentives to examine the economic consequences of dropping subscription agencies.

The toughest assignment that librarians have to carry out nowadays is the protection of collection development. As reported by White and Fry (1977), ten years ago libraries were spending twice as much on books as on periodicals. Today, more acquisition dollars are being spent on periodicals even though the number of titles is on a downward slope in both categories. In many cases, this convenient shifting of dollars has allowed many libraries to maintain their current level of periodical holdings and to postpone the often unpopular but necessary decisions about cancelling triplicate, duplicate, and even single subscriptions. While many libraries were faced with this problem in the mid-70's, it seems that this phenomenon has become more acute at the Université de Montréal, in the late 70's. How does one go about deciding to renew a subscription instead of purchasing a book? Generally, the line of reasoning is based on the belief that periodicals are the main sources of research. Studies (Kriz, 1978; McGrath, 1978) indicate that these decisions must be made on a subject-by-subject basis, as the importance of journals over books cannot be assumed.

When confronted with tighter budgets, librarians' favored actions have generally been the following (White, 1977): 1) cut down on the placement of titles not previously owned; this seems to be an easier decision than to drop a subscription that has been automatically renewed for years, no matter the degree of evaluation made on the periodical collection; 2) cancel duplicate subscriptions; this action gives credence to the belief that collection continuity is rated above information use; 3) delete foreign periodicals, mainly those published in languages other than English. These are the a posteriori criteria that practice has put in the forefront. It is suggested that few librarians and institutions would approve of these guidelines if they were told to apply them. However, dissenters have little choice but to find more rational and equitable ways to allocate diminishing funds to academic departments.

CONCLUSIONS AND IMPLICATIONS

This study can be summed up with the following major findings: 1) a drastic shift of library funds from books to periodicals has occurred in the past years; despite this transfer, the number of titles is declining in both categories; 2) foreign periodical titles, which constitute the overwhelming proportion of subscriptions at the Université de Montréal, are much more expensive than domestic titles; 3) periodical prices actually paid by the Library are higher than those advertized by publishers, because of factors such as subscription agencies, postal costs, international exchange rates, and other handling services; and 4) if cost and resource allocation studies are to be conducted with a reasonable amount of accuracy and investment in staff time, the present data base cannot be used.

Assuming that the drifting of funds from books to periodicals was a temporary measure, the Library management is heading for major decisions about which periodical titles should be placed and which ones should be deleted. Although no recipes are available to make these decisions, a manageable information system capable of providing on request hard data on basic questions such as the number and price of domestic and foreign titles by discipline, and of establishing relationships with other variables such as the number and level of students is a sine qua non condition to equitable resource allocation to academic unit and collection evaluation. Because of the high proportion of foreign titles purchased by the Library, it is also suggested that an in-depth study be undertaken to examine the economic role of subscription agencies.

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